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AN OVERVIEW OF RESEARCH IN LEARNING, MOTIVATION, AND PERCEPTION.

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RESEARCH IN THE LEARNING, MOTIVATION, AND PERCEPTION OF MENTAL RETARDATES IS ESSENTIAL TO AN UNDERSTANDING OF THEIR BEHAVIOR AND OF THEIR ABILITIES. MANY INVESTIGATORS HAVE USED THE PROBLEMS AND DESIGNS OF RESEARCH WITH LOWER ANIMALS IN STUDYING THE BEHAVIOR OF HUMAN RETARDATES. IT IS QUESTIONABLE THAT SUCH ORIENTATION WILL REALLY ADD TO THE UNDERSTANDING OF MENTAL RETARDATION. ALSO, RESEARCH WITH THE MENTALLY RETARDED HAS TENDED TO TREAT THE PROCESSES OF LEARNING, MOTIVATION, AND PERCEPTION AS UNRELATED. THIS CAUSES THE RESULTS OF SUCH INVESTIGATIONS TO BE DIFFICULT TO INTERPRET AND RESTRICTED IN VALUE FOR GENERALIZATION. THERE HAVE APPEARED, HOWEVER, ENCOURAGING EXAMPLES OF NEW RESEARCH ON RETARDATION THAT ARE NOT SO NARROW, FRAGMENTARY, AND UNIMAGINATIVE. EXAMPLES OF THIS RESEARCH INCLUDE (1) A SERIES OF STUDIES INVESTIGATING THE RELATIVE SIGNIFICANCE OF CHRONOLOGICAL AGE, MENTAL AGE, AND INTELLIGENCE QUOTIENT FOR LEARNING IN RETARDED INDIVIDUALS, (2) STUDIES REEVALUATING BEHAVIORAL DIFFERENCES IN LEARNING AND PERCEPTION BETWEEN FAMILIAL AND ORGANIC RETARDATES, (3) WORK ON COMPARING THE PERFORMANCE OF INSTITUTIONALIZED AND NONINSTITUTIONALIZED RETARDATES, (4) INVESTIGATIONS OF THE RELATIONSHIP BETWEEN ABILITY TO PERFORM COMPLEX LEARNING TASKS AND ABILITY TO UTILIZE VERBAL CUES, AND (5) STUDIES ON THE EFFECT OF STIMULI FROM THE PHYSICAL ENVIRONMENT ON THE BEHAVIOR OF RETARDED CHILDREN. THIS ARTICLE WAS PUBLISHED IN "EXCEPTIONAL CHILDREN," VOLUME 28, MAY 1962. IT IS A SHORTENED VERSION OF A LONGER PRESENTATION PREPARED BY HAROLD STEVENSON AND EDWARD ZIGLER UNDER THE SPONSORSHIP OF THE COOPERATIVE RESEARCH PROGRAM OF THE OFFICE OF EDUCATION, U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. (WD)

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An Overview of Research in Learning, Motivation, and Perception [1]

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The areas of learning, motivation, and perception are three of the classic areas of experimental psychology and consequently are among the most highly developed in methodology, conceptual sophistication, and theory construction. Research workers in mental retardation who have entered these fields have both profited by and suffered from the previous extensive work. The designs, statistical analysis, and other formal aspects of their research are among the best in the field of mental retardation. It appears, however, that investigators have been unable to avoid the temptation of relying too heavily on the earlier work with animal subjects. Consequently, they have sometimes rather mechanically translated research designs developed in animal studies to their investigations of the mentally retarded. Although creative applications of the methods and results employed in animal studies to the study of the retarded may yield valuable information, it is unlikely that great progress will occur through the unimaginative translation of problems from one type of population to another. Such investigations meet the methodological requirements of good research, but add little to our understanding of mental retardation.

In addition to utilizing methodology which was developed for research with other types of subjects, investigators have tended to restrict their research to problems relevant to the populations investigated earlier. As a result, research has dealt with a narrow range of problems. For example, operant conditioning and discrimination learning have been studied to a far greater degree than such topics as complex learning, higher mental processes, classroom learning, and problem solving in social situations.

The mechanical translation and limitation of problems has resulted in the tendency to conceptualize the retarded child as sharing the psychological

characteristics of lower animals. With this orientation, the research has been directed at the discovery of the differences between the behavior of normal and retarded subjects and less concern has been shown for the similarities in the behavior of normal and retarded individuals. It is clear that retarded individuals do not form a discrete group possessing characteristics not found in norral individuals. Since the intellectually retarded form the extreme of a continuous distribution, they should be considered as sharing in various degrees the characteristics found in the normal and superior segments of the distribution.

A major trend in general behavior theory is the consideration of learning, motivation, and perception as integrally interrelated processes. This trend has not been reflected in research with the mentally retarded, for studies with the retarded have tended to investigate these as discrete aspects of behavior. The failure to consider the motivational determinants of learning in the retarded has made many of the studies difficult to interpret and has restricted the generalizations that can be made from them. It is apparent that retarded individuals have motivational structures which differ from those of other persons because of their intellectual deficit, atypical social experiences, and particular environmental histories. Learning and perceptual studies which do not attempt to deal with motivational processes make it impossible to determine whether the atypical performance of retarded subjects reflects differences in learning and perceptual processes or differences in motivational structure. For example, recent reevaluations (Gallagher, 1957; Osborn, 1960) of earlier studies indicate that some of the differences in performance reported between normal and different types of retarded subjects may be more parsimoniously explained by differences in motivation than by differences in perceptual and cognitive processes.

A significant feature of research in mental retardation is that, with the exception of the rigidity concept emanating from the work of Lewin (1936) and Kounin (1941), no theoretical position has emerged from research dealing with the

learning, motivational, or perceptual behavior of the retarded. The present theoretical status of research in mental retardation is characterized by an eclecticism with a façade of theoretical sophistication. There has been an attempt to short-circuit genuine theory construction, since the empirical stages in the development of concepts concerning mental retardation have been avoided.

One of the requirements of theory is that it deal with and in fact be developed within the area in which the theory is to be employed. Theoretical concepts must be developed inductively, and their interrelationships must be specified before the conceptual network embodied in a theory can be evolved. The tendency to apply portions of such theoretical positions as those of Kohler, Rotter, Spence, Hebb, and others has stood in the way of development of theories or models which generate an integrated body of research with retarded individuals. A high value has been placed upon research derived from theory. This has deterred researchers from undertaking empirical research yielding the required data from which the inductive bases for theory construction might be developed. The over-enthusiastic utilization of the particular aspects of general theories which have some relevance for the behavior of retarded individuals has added to the tendency for research with the retarded to be narrow and to avoid some of the problems associated with mental retardation. There are practically no observational studies of learning, motivation, or perception in the retarded. These types of studies have been of value in increasing understanding of the behavior of non-retarded persons, and appear to be a necessary step for the development of theoretical considerations of mental retardation.

Conclusions

In assessing the current status of research in the areas of learning, motivation, and perception several characteristics of the research with mentally retarded subjects are apparent. First, the extensive background of research in these areas has resulted in both advantages and disadvantages for the researcher

in mental retardation. The primary advantage is the availability of well developed research methodology. The primary disadvantage is the tendency to apply the problems and designs of research with lower animals to investigations of the behavior of retarded individuals. Second, the interrelationships among learning, motivation, and perception have not been realized by researchers in mental retardation, and the research unrealistically has tended to deal with these as unrelated processes. Third, there has been premature emphasis on theoretical sophistication and, as a result, portions of existing theories have been applied to behavior of retarded individuals. This has deterred attempts at constructing theories of behavior which focus on the mentally retarded. The result of these shortcomings has been to make work with the retarded narrow, fragmentary, and unimaginative.

Current Promising Research

Although the conclusions just discussed generally characterize current research in this area, there are many studies which hold promise of opening new areas of research, of yielding information about practical problems in treatment and training of the mentally retarded, and of providing data from which theoretical positions might be developed.

There has been a series of recent studies investigating the relative significance of CA, MA, and IQ for learning in retarded individuals. From such studies information is being obtained concerning the effects of the experience and physical maturation associated with CA, the cognitive development associated with MA, and the relationship between the two. It is possible from such studies to obtain a more comprehensive interpretation of the consequences for learning when intellectual level is incommensurate with chronological age. It is obvious that the ability to predict the behavior of retarded subjects will be increased by the specification of the relationship between experiential factors and mental development. This specification will be possible only when subjects are matched on more than such global measures as CA and MA. Such variables as etiology, past histories,

and specific aspects of intellectual functioning must eventually be considered in matching groups of subjects.

There have been several recent investigators reevaluating behavioral differences in learning and perception between familial and organic retardates. The results have revealed smaller differences than those previously reported. This work suggests that the nature of intellectual deficit does not differ between the two types of individuals to the degree previously believed, and that differences in performance previously found may be related to differences in motivational structure. Recent studies have shown that familials tend to be drawn from a narrow portion of the general population, while organics are drawn from a broader segment of the general population. Thus, class differences previously found in general learning and motivation undoubtedly operate with retarded children. The literature on social class provides insight into the types of controls which are appropriate in studying different types of retarded individuals.

A concept which has had tremendous influence in generating research for nearly 30 years is that of rigidity, or behavioral stereotypy. This concept was utilized in an effort to deal with observed behavior in retarded individuals, and has been of significance not so much for its validity as for the large number of studies which have been stimulated by it. The concept has been employed in each of the areas under consideration. These studies are especially significant for they have shown that the often observed behavioral rigidity of the retarded is multiply determined by such factors as intellectual level, institutionalization, past history of success and failure, type of reward employed, and relationship with adults. Further investigations of the antecedents and consequences of rigidity would appear to provide a fruitful path to the construction of a more comprehensive theory of retarded functioning.

Another promising body of research in mental retardation is the recent work being done in comparing the performance of institutionalized and

noninstitutionalized retardates. Usually, comparisons have been made of institutionalized retarded and noninstitutionalized normal subjects. It is impossible from these latter studies to determine the relative contribution of institutionalization and retardation to the learning and motivational differences found between the two groups of individuals. Institutionalization has been shown to affect the relative efficacy of various types of rewards for modifying behavior, the reluctance of retarded individuals to become involved in adult-initiated tasks, and the differential effectiveness of supportive adults on different types of behavior. Such factors have forced a reevaluation of the nature of mental retardation independent of the effects of institutionalization. Attention must be paid continuously to the problem of sampling in studies of institutionalized individuals. Consideration must be given not only to effects of institutionalization itself, but also to the selective factors which may operate in determining what types of individuals are institutionalized.

Associated with the work on the effects of institutionalization are the recent studies concerned with the pre-institutional history of retarded individuals. An inordinate amount of social deprivation is found to be commonly experienced by the institutionalized retarded. This deprivation has significant effects on performance in a variety of tasks and on the effects of institutionalization as well.

Recent general work has indicated that the ability to perform complex learning tasks is closely related to the ability to utilize verbal cues. Luria (1956) has emphasized the deficiency in the use of verbal cues by the mentally retarded and has advanced this as the basis for their learning difficulties. Although few learning studies have been done which experimentally manipulate the degree to which verbal cues can be employed, they appear to provide extremely valuable information about this possible deficiency in the retarded. It would be of great significance to know whether the learning process of retarded individuals is characterized by this difference in utilization of verbal cues, and whether

such a deficiency might be compensated for by the utilization of other types of cues, such as those provided by the motoric system. Research in this area may also be important in discovering the basis for the discrepancies often reported between the verbal and performance scores obtained by retardates in conventional intelligence tests.

There have recently been many different approaches to the investigation of the motivational characteristics of the retarded. These have centered primarily around the concepts of anxiety, achievement, and developmental changes in motivation for different types of incentives. Performance in learning and perceptual tasks has been found to differ with the strength and type of motivation operative. As previously noted, an understanding of the retarded has been hampered by the failure to consider the contribution of motivational factors to performance. For example, the high level of anxiety of retarded children may play as significant a role in their learning as low mental age. An understanding of the significance of different types of rewards for normal individuals of different developmental levels as well as retarded individuals is necessary before a comprehensive evaluation of the contribution of motivational differences to differences in learning and perception will be forthcoming.

Recently, the effect of stimuli from the physical environment on the behavior of retarded children has been investigated in a series of studies concerned with distractibility, activity level, and curiosity. Studies of these types provide information concerning the differential effects of external environmental stimuli on behavior as a function of intellectual level. One of the common characteristics ascribed to retarded children is a short attention span. Retarded children are said to be distracted by peripheral environmental stimuli. Investigations of the validity of such a proposal and of the variables which influence this characteristic have immediate value for the understanding and learning of perceptual processes in the retarded. Most of the studies have been concerned

with demonstrating differences between retardates and normals in their sensitivity tc environmental stimuli, rather than dealing with the antecedents of such behavior.

Acquisition of information when the individual is not in a formal learning situation is highly dependent upon curiosity. Investigations of curiosity in the retarded should provide information relevant to the problem of their learning potential. Closely related to curiosity is incidental learning, or learning without awareness. While earlier studies were concerned with the demonstration of the existence of incidental learning in retarded children, current studies are investigating the variables which are significantly associated with performance in such learning tasks. These studies give further information about the effects of peripheral stimuli on the behavior of retarded subjects.

Conclusions

The discussion above does not provide a complete coverage of the recent work in learning, perception, and motivation, but does offer examples of work which hold promise for increasing our knowledge in these areas of retarded functioning. It is significant that most of these studies are in their initial stages and have only begun to scratch the surface of the problems being raised. There is a myriad of meaningful research problems which could be undertaken in these areas. It is of considerable significance that many of these areas are being explored by relatively young research workers who give every indication that they will continue to do important work.

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Footnote

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